Please return all attachments with search results. Thanks

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Molly Ceperley Examiner #: 59757 Date: 02/11/03
Art Unit: 1641 Phone Number 308-4239 Serial Number
Mail Box and Bldg/Room Location: 8D15 Results Format Preferred 09/982,265
→ 7E12

If more than one se **r of need.**
****
Please provide a detailed : the subject matter to be searched.
Include the elected speci rs, and combine with the concept or
utility of the invention. relevant citations, authors, etc, if
known. Please attach a c

Title of Invention: _____

Inventors (please provide full names): Bo Qui, Stanley Stein, Guobao Zhang, Leonard Sigal, Michael Brunner, Michael Katz

Earliest Priority Filing Date: 10/24/00

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

The claims are of almost no help in searching (see attachment).

The invention is the use of a polyethyleneglycol to link two immunologically active molecules (epitope, hapten, antigen, antibody).

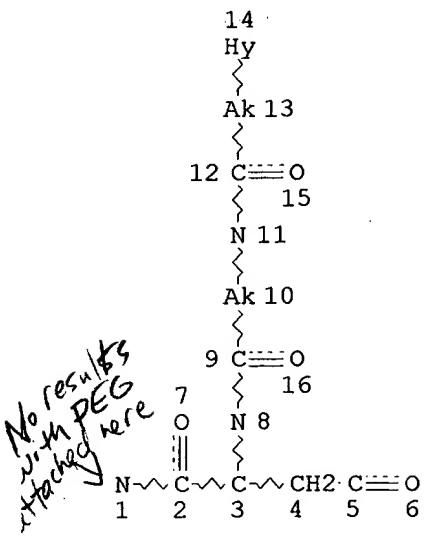
The preferred linker is an α,ω-diamino PEG (NH_2-PEG-NH_2) connected to aspartic acid to form a copolymer (see Figs. 1+2). I'm not sure how the PEG links to the NH_2 exactly. For preparation methods see p. 15-17 attached.

PEGs are known linkers (see Zalipsky attached). Probably try to direct the search to the combination of PEG (diamino) and aspartic acid. I would also be interested in anything you could come up with which additionally refers to vinyl sulfone (VS) or divinyl sulfone (DVS). See the last structure of Fig. 2.

Please search for the above in combination with Borellia burgdorferii peptides (active agent causing lyme disease).

[redacted]

```
=> d que l59
L56              STR
```



No results with PEG attached here

Considered. 03/06/03 MEC

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NODE ATTRIBUTES:
CONNECT IS E2  RC AT  10
CONNECT IS E2  RC AT  13
DEFAULT MLEVEL IS ATOM
GGCAT   IS PCY  AT  14
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS E5 C  E2 N  E1 S  AT  14

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  16

STEREO ATTRIBUTES: NONE
L58          18 SEA FILE=REGISTRY SSS FUL L56
L59          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L58


=> d ibib abs hitstr l59 1-16

L59  ANSWER 1 OF 16  HCAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:        2002:303461  HCAPLUS
DOCUMENT NUMBER:         137:90412
TITLE:                   Development of a homogeneous, fluorescence resonance
                         energy transfer-based in vitro recruitment assay for
                         peroxisome proliferator-activated receptor .delta. via
                         selection of active LXXLL coactivator peptides
AUTHOR(S):               Drake, Katherine A.; Zhang, Ji-Hu; Harrison, Richard
                         K.; McGeehan, Gerald M.
CORPORATE SOURCE:        Experimental Station, Dupont Pharmaceutical Research
                         Laboratories, Leads Discovery, Wilmington, DE, 19880,
                         USA
SOURCE:                  Analytical Biochemistry (2002), 304(1), 63-69
                         CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER:               Elsevier Science
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L28 5424 SEA FILE=REGISTRY SSS FUL L26
L29 STR

CH~CH~SO2
1 2 3

← this should cover all vinyl sulfones

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L31	183103	SEA FILE=REGISTRY	SSS FUL L29		
L32	30	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L21 AND (L28 OR L31)
L33	9707	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	EPITOPES/CT
L34	4069	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	HAPTENS/CT
L35	197497	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	ANTIGENS+NT/CT
L36	215197	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	ANTIBODIES+NT/CT
L37	6	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L32 AND (L33 OR L34 OR L35 OR L36)

=> d ibib abs hitstr 1-6

L37 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:595415 HCAPLUS
DOCUMENT NUMBER: 137:137266
TITLE: Immunological test kit with Borrelia burgdorferi epitope
INVENTOR(S): Qiu, Bo; Stein, Stanley; Zhang, Guobao; Sigal, Leonard; Brunner, Michael; Katz, Michael
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002106706	A1	20020808	US 2001-982264	20011017
US 2002197271	A1	20021226	US 2001-982259	20011017

PRIORITY APPLN. INFO.: 60 US 2000-242819P P 20001024

AB Borrelia burgdorferi peptide epitopes are conjugated to PEG copolymer and biotin. These peptide conjugates are then used in test kits, such as ELISA, for detection of anti-Borrelia antibodies in human serum and hence diagnosis of Lyme disease.

IT **58-85-5DP**, Biotin, epitope conjugates **25322-68-3DP**, PEG, peptide derivs.
RL: ARU (Analytical role, unclassified); DGN (Diagnostic use); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(immunol. test kit with Borrelia burgdorferi epitopes conjugates to PEG

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L18           961 SEA FILE=REGISTRY ABB=ON  PLU=ON  (101247-29-4/CRN OR 103932-89
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                  262429-36-7/CRN OR 26488-91-5/CRN OR 27881-01-2/CRN OR
                  27881-03-4/CRN OR 27897-94-5/CRN OR 285978-02-1/CRN OR
                  286460-86-4/CRN OR 2906-43-6/CRN OR 2906-48-1/CRN
L19             2 SEA FILE=REGISTRY ABB=ON  PLU=ON  ASPARTIC ACID/CN
L20             5 SEA FILE=REGISTRY ABB=ON  PLU=ON  L9 AND L18
L21           164 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L7 AND L19) OR L20
L26               STR
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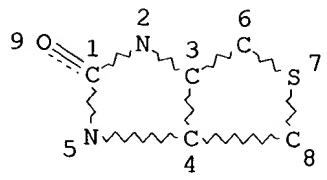

Biotin

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   1
NUMBER OF NODES IS   9

STEREO ATTRIBUTES: NONE
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09/982,265

February 12, 2003

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L2          942 SEA FILE=HCAPLUS ABB=ON  PLU=ON  LYME DISEASE+OLD/CT
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L5         1640 SEA FILE=HCAPLUS ABB=ON  PLU=ON  BORRELIA BURGDORFERI/CT
L6         2082 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L2 OR L4 OR L5
L7            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYETHYLENE GLYCOL/CN
L9        31215 SEA FILE=REGISTRY ABB=ON  PLU=ON  107-21-1/CRN
L18         961 SEA FILE=REGISTRY ABB=ON  PLU=ON  (101247-29-4/CRN OR 103932-89
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                27881-03-4/CRN OR 27897-94-5/CRN OR 285978-02-1/CRN OR
                286460-86-4/CRN OR 2906-43-6/CRN OR 2906-48-1/CRN
L19           2 SEA FILE=REGISTRY ABB=ON  PLU=ON  ASPARTIC ACID/CN
L20           5 SEA FILE=REGISTRY ABB=ON  PLU=ON  L9 AND L18
L21         164 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L7 AND L19) OR L20
L22           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L21 AND L6
```

Compounds w/ PEG as component

Compounds with aspartic acid or derivatives as a component

Considered 03/06/03 MSC

```
=> d ibib abs hitind hitstr 1-2

L22  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         2002:595415  HCAPLUS
DOCUMENT NUMBER:          137:137266
TITLE:                    Immunological test kit with Borrelia
                          burgdorferi epitope
INVENTOR(S):              Qiu, Bo; Stein, Stanley; Zhang, Guobao; Sigal,
                          Leonard; Brunner, Michael; Katz, Michael
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 14 pp.
```